



PTO/SB/08B (10-01)

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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Sheet 1 of 10**Complete if Known**

Application Number	10/758,599
Filing Date	January 16, 2004
First Named Inventor	Danny Grant
Art Unit	2837
Examiner Name	
Attorney Docket Number	IMMR064/00 US

U.S. PATENT DOCUMENTS					
Examiner	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code <sup>2</sup> (if known)			
P.Z.		2,972,140	2/14/1961	Hirsch	
		3,157,853	11/17/1964	Hirsch	
		3,220,121	11/30/1965	Cutler	
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		3,517,446	6/30/1970	Coryon et al.	
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		4,891,764	1/2/1990	McIntosh	
		4,896,554	01/1990	Culver	
		4,930,770	6/5/1990	Baker	
		4,934,694	6/19/1990	McIntosh	
		4,949,119	08/1990	Moncrief et al.	
		5,019,761	5/28/1991	Kraft	
		5,022,384	6/11/1991	Freels	

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<sup>1</sup> EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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JZ		5,022,407	6/1/1991	Horch et al.	
		5,035,242	7/30/1991	Franklin	
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		5,044,956	09/1991	Behensky et al.	
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		5,146,566	09/1992	Hollis, Jr. et al.	
		5,165,897	11/24/1992	Johnson	
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		5,240,417	8/31/1993	Smithson et al.	
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JZ		5,466,213	11/14/1995	Hogan	

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I-Z		5,506,605	04/1996	Paley	
		5,542,672	08/1996	Meredith	
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I-Z		5,880,714	03/1999	Rosenberg et al.	
I-Z		5,889,672	03/1999	Schuler et al.	

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Sheet **4** of **10****Complete if Known**

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First Named Inventor	Danny Grant
Art Unit	2837
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I-I		5,897,437	04/1999	Nishiumi et al.	
		5,912,661	06/1999	Siddiqui	
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I-I		6,563,487	05/2003	Martin et al.	

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Sheet 5 of 10**Complete if Known**

Application Number	10/758,599
Filing Date	January 16, 2004
First Named Inventor	Danny Grant
Art Unit	2837
Examiner Name	
Attorney Docket Number	IMMR064/00 US

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>4</sup> (if known)			
<u>L-Z</u>		EP	0349086		1/3/1990	Stork Kwant B.V.	
		JP	H2-185278		7/19/1990	Taito Corporation	
		JP	H4-8381		1/13/1992	Epoch Co. and Key- Planning Co.	
		JP	H7-24147		1/27/1995	Sega Corporation	
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<u>f-z</u>		EP	0 265 011 A1		04/1988		
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		EP	0 626 634 A2		11/1994		
		WO	WO 92/00559		01/1992		
		WO	WO 95/20788		08/1995		
		WO	WO 97/31333		08/1997		
<u>L-Z</u>		WO	WO 00/03319		01/2000		

**OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		BAIGRIE, "Electric Control Loading - A Low Cost, High Performance Alternative," <i>Proceedings of Interservice/Industry Training Systems Conference</i> , pp. 247-254, November 6-8, 1990.
		IWATA, "Pen-based Haptic Virtual Environment," <i>U-7803-1363-1/93 IEEE</i> , pp. 287-292, 1993.
		RUSCO, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," MIT Libraries Archives, pp. 1-131, May 1990, archived 08/14/1990.
		BROOKS et al., "Hand Controllers for Teleoperation - A State-of-the-Art Technology Survey and Evaluation," <i>JPL- Publication 85-11; NASA-CR-175890; N85-28559</i> , pp. 1-84, 03/1/1985.
		JONES et al., "A perceptual analysis of stiffness," <i>ISSN 0014-4819 Springer International (Springer-Verlag); Experimental Brain Research</i> , Vol. 79, No. 1, pp. 150-156, 1990.
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Examiner Signature	<u>L J J</u>	Date Considered	<u>10/12/05</u>
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			SNOW et al., "Model-X Force-Reflecting-Hand-Controller," NT Control No. NPO-17851; JPL Case No. 7348, pp. 1-4, with 45 pages of attachments, 06/15/1989.				
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			TADROS, "Control System Design for a Three Degree of Freedom Virtual Environment Simulator Using Motor/Brake Pair Actuators, MIT Archive, pp. 1-88, February 1990, archived 8/13/90.				
			CALDWELL et al., "Enhanced Tactile Feedback (Tele-Taction) Using a Multi-Functional Sensory System," 1050-4729/93, pp. 955-960, 1993.				
			ADELSTEIN, "Design and Implementation of a Force Reflecting Manipulandum for Manual Control research," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 1-12, 1992.				
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			KONTARINIS et al., "Display of High-Frequency Tactile Information to Teleoperators," <i>Telemanipulator Technology and Space Telerobotics</i> , Won S. Kim, Editor, Proc. SPIE Vol. 2037, pp. 40-50, Sep. 7-9, 1993.				
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			ADELSTEIN, "A Virtual Environment System For The Study of Human Arm Tremor," Ph.D. Dissertation, Dept. of Mechanical Engineering, MIT, June 1989, archived 3/13/90.				
			BEJCZY, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," <i>Science</i> , Vol. 208, No. 4450, pp. 1327-1335, 1980.				
			BEJCZY et al., "Generalization of Bilateral Force-Reflecting Control of Manipulators," <i>Proceedings Of Fourth CISM-IFTOMM</i> , Sep. 8-12, 1981.				
			MCAFFEE, "Teleoperator Subsystem/Telerobot Demonsdrator: Force Reflecting Hand Controller Equipment Manual," JPL D-5172, January 1988.				
			MINSKY, "Computational Haptics: The Sandpaper System for Synthesizing Texture for a Force-Feedback Display," Ph.D. Dissertation, MIT, June 1995, archived 7/6/95.				

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			JACOBSEN et al., "High-Performance, Dexterous Telerobotic Manipulator With Force Reflection," <i>Intervention/ROV '91 Conference &amp; Exposition</i> , Hollywood, Florida, May 21-23, 1991.				
			SHIMOGA, "Finger Force and Touch Feedback Issues in Dexterous Telemanipulation," <i>Proceedings of Fourth Annual Conference on Intelligent Robotic Systems for Space Exploration</i> , Rensselaer Polytechnic Institute, Sep. 30 - Oct. 1, 1992.				
			IBM Technical Disclosure Bulletin, "Mouse Ball-Actuating Device With Force and Tactile Feedback," Vol. 32, No. 9B, February 1990.				
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			HOWE, "A Force-Reflecting Teleoperated Hand System for the Study of Tactile Sensing in Precision Manipulation," <i>Proceedings of the 1992 IEEE International Conference on Robotics and Automation</i> , Nice, France, May 1992.				
			EBERHARDT et al., "OMAR - A Haptic display for speech perception by deaf and deaf-blind individuals," <i>IEEE Virtual Reality Annual International Symposium</i> , Seattle, WA, Sep. 18-22, 1993.				
			RABINOWITZ et al., "Multidimensional tactile displays: Identification of vibratory intensity, frequency, and contactor area," <i>Journal of The Acoustical Society of America</i> , Vol. 82, No. 4, October 1987.				
			BEJCZY et al., "Kinesthetic Coupling Between Operator and Remote Manipulator," <i>International Computer Technology Conference</i> , The American Society of Mechanical Engineers, San Francisco, CA, August 12-15, 1980.				
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Examiner Signature	<i>L. Y. Ja</i>	Date Considered	10/12/05
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Sheet **8** of **10****Complete if Known**

Application Number	10/758,599
Filing Date	January 16, 2004
First Named Inventor	Danny Grant
Art Unit	2837
Examiner Name	
Attorney Docket Number	IMMR064/00 US

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)			
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Sheet 9 of 10**Complete if Known**

Application Number	10/758,599
Filing Date	January 16, 2004
First Named Inventor	Danny Grant
Art Unit	2837
Examiner Name	
Attorney Docket Number	IMMR064/00 US

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